Hospitalization and Disability Associated with Illnesses/Injuries Definitely or Probably Related to Pesticide Exposure in California[1,2]
1999

OCCUPATIONAL ILLNESS AND INJURY[3]

ACTIVITY[4]	EQUIPMENT[5]/ EXPOSURE MECHANISM[6]	TOTAL CASES	HOSPITALIZATION[7]				DISABILITY[8]			
			Number of Cases			Total Days Reported	Number of Cases			Total Days Reported
			Days Known	Indefinite	Unknown		Days Known	Indefinite	Unknown	
Mixer/Loader	Aerial	2	0	0	0	0	0	0	0	0
	Ground	5	0	0	0	0	0	0	2	3
	Hand	6	0	0	0	0	0	0	2	3
	Chamber (Fumigant)	1	0	0	0	0	0	0	0	0
	Other/Unknown	46	0	0	0	0	1	0	7	15
	Other/Unknown (Fumigant)	1	0	0	0	0	0	0	0	0
Applicator	Ground	15	0	0	0	0	1	0	1	3
	Hand	47	0	0	1	2	3	1	7	17
	Hand (Fumigant)	2	0	0	0	0	0	0	1	2
	Chamber	3	0	0	0	0	0	0	1	3
	Chamber (Fumigant)	1	0	0	0	0	0	0	1	1
	Other/Unknown	71	0	0	0	0	0	0	12	40
Mechanical Work on Contaminated Equipment		20	0	0	1	2	0	0	6	37
Pack/Process (Commodity)	Exposed to Drift	81	1	0	1	5	8	0	15	24
	Exposed to Residue	1	0	0	0	0	0	0	1	4
	Other/Unknown Exposure	2	0	0	0	0	0	0	0	0
Field Worker	Exposed to Drift	10	0	0	0	0	4	0	1	7
	Exposed to Residue	23	0	0	10	17	7	2	11	28
	Other/Unknown Exposure	8	0	0	0	0	0	0	0	0
Routine Indoor Activity	Exposed to Drift	31	0	0	0	0	1	1	5	8
	Exposed to Residue	55	1	0	0	0	3	1	14	28
	Other/Unknown Exposure	9	1	0	0	0	3	0	1	5

ACTIVITY[4]	EQUIPMENT[5]/ EXPOSURE MECHANISM[6]	TOTAL CASES	HOSPITALIZATION[7]				DISABILITY[8]			
			Number of Cases			Total Days Reported	Number of Cases			Total Days Reported
			Days Known	Indefinite	Unknown		Days Known	Indefinite	Unknown	
Routine Outdoor Activity	Exposed to Drift	24	0	0	0	0	9	0	2	8
	Other/Unknown Exposure	1	0	0	0	0	0	0	0	0
Manufacture/Formulation		1	0	0	0	0	1	0	0	0
Transport/Storage/Disposal		40	0	0	0	0	1	0	8	15
Emergency Response		12	1	0	0	0	1	0	0	0
Other Occupational Activity		44	0	0	2	6	7	2	8	35
Unknown Occupational Activity		2	0	0	0	0	0	0	2	7
Occupational Totals		*564*	*4*	*0*	*15*	*32*	*50*	*7*	*108*	*293*

NON-OCCUPATIONALILLNESS AND INJURY[3] (less fully reported than occupational cases)

Mixer/Loader	Other/Unknown Exposure	4	0	0	0	0	2	0	0	0
Applicator	Hand	16	0	0	0	0	2	1	2	3
	Other/Unknown Exposure	10	0	0	0	0	3	0	1	2
	Other/Unknown (Fumigant)	1	0	0	0	0	0	0	0	0
Routine Indoor Activity	Exposed to Drift	110	0	0	0	0	82	0	0	0
	Exposed to Residue	24	0	0	0	0	13	0	0	0
	Other/Unknown Exposure	14	1	0	4	11	7	0	2	4
Routine Outdoor Activity	Exposed to Drift	39	0	0	0	0	28	0	1	4
	Exposed to Residue	2	0	0	0	0	2	0	0	0
	Other/Unknown Exposure	3	0	0	1	3	2	0	1	4
Transport/Storage/Disposal		1	0	0	0	0	0	0	0	0
Other Non-Occupational Activity		42	3	1	11	55	15	1	2	12
Non-Occupational Totals		*266*	*4*	*1*	*16*	*69*	*156*	*2*	*9*	*29*
Definite/Probable Case Totals		**830**	**8**	**1**	**31**	**101**	**206**	**9**	**117**	**322**

1. Source: California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.

2. **Relationship:** Degree of correlation between pesticide exposure and resulting symptomatology.

Definite	:	High degree of correlation between pattern of exposure and resulting symptomatology. Requires both medical evidence (such as measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (environmental and/or biological samples, exposure history) to support the conclusions.
Probable	:	Relatively high degree of correlation exists between the pattern of exposure and the resulting symptomatology. Either medical or physical evidence is inconclusive or unavailable.

3. **Occupational/Non-occupational:** The relationship between the illness/injury and the individual's work.

Occupational	:	Work related. The individual was on the job at the time of the incident. This includes both paid employees and volunteers working in similar capacity to paid employees.
Non-occupational	:	Not work related. The individual was not on the job at the time of the incident. This category includes individuals while on the way to or from work (before the start or after the end of their workday).

4. **Activity:** Activity of the exposed individual at the time of exposure

Mixer/Loader	:	Mixes and/or loads pesticides. This includes: (1) removing a pesticide from its original container, (2) transferring the pesticide to a mixing or holding tank, (3) mixing pesticides prior to application, (4) driving a nurse rig, or (5) transferring the pesticide from a mixing/holding tank or nurse rig to an application tank.
Applicator	:	Applies pesticides by any method or conducts activities considered ancillary to the application (e.g., cleans spray nozzles in the field).
Mechanical Work on Contaminated Equipment	:	Maintains (e.g. cleans, repairs or conducts maintenance) pesticide-contaminated equipment used to mix, load or apply pesticides as well as the protective equipment used by individuals involved in such activities. This excludes the following: 1) maintenance performed by applicators on their equipment incidental to the application (classified as 'Applicator'); 2) maintenance performed by mixer/loaders on their equipment incidental to mixing and loading (classified as 'Mixer/Loader'); and 3) decontamination by HAZMAT teams (classified as 'Emergency Response').
Packer/ Processor	:	Handles (packs, processes or retails) agricultural commodities from the packing house to the final market place. Field packing of agricultural commodities is classified as 'Field Worker'.
Field Worker	:	Works in an agricultural field performing tasks such as advising, scouting, harvesting, thinning, irrigating, driving tractor (except as part of an application), field packing, conducting cultural work in a greenhouse, etc. Researchers performing similar tasks in an agricultural field are also included.
Routine Indoor	:	Conducts activities in an indoor environment with minimal expectation for exposure to pesticides. This includes people in offices and businesses, residential structures, etc. who are not handling pesticides.
Routine Outdoor	:	Conducts activities in an outdoor environment with minimal expectation for exposure to pesticides. This excludes field workers in agricultural fields. This includes gardeners who are not handling pesticides.
Manufacture/ Formulation	:	Manufactures, processes or packages pesticides. This includes "mixing" if it is done in a plant for application elsewhere.
Transport/ Storage/ Disposal	:	Transports or stores pesticides between packaging and preparation for use. This includes shipping, warehousing and retailing as well as storage by the end-user prior to preparation for use. Disposal of unused pesticides is also included in this activity. This excludes driving a nurse rig to an application site.

4. **Activity:** Activity of the exposed individual at the time of exposure (continued)

Emergency Response	:	Emergency response personnel (Police, fire, ambulance and HAZMAT personnel) responding to a fire, spill, accident or any other pesticide incident in the line of duty.
Other	:	Activity is not adequately described by any other activity category. This includes: 1) being inside a vehicle; 2) dog groomers not handling pesticides; 3) individuals handling pesticide treated wood; 4) two or more activities with potential for pesticide exposure.
Unknown	:	Activity is not known.

5. **Equipment**: Type of equipment used for an application.

Aerial	:	Aerial application equipment (fixed wing or helicopter).
Ground	:	Ground application equipment.
Hand	:	Hand-held application equipment that propels a pesticide from a reservoir.
Chamber	:	An enclosed, sealed chamber designed specifically for fumigating or sterilizing the contents of the chamber.
Tarp	:	Tarp placed over a commodity, structure, or field that is designed to restrict a fumigant to the application site.
Other	:	Any application methodology not described above.
Unknown	:	The type of application equipment is not known.
Note:	:	Equipment with a 'Fumigant' designation involves only fumigants.

6. **Exposure:** Characterization of how an individual came in contact with a pesticide

Drift	:	Spray, mist, fumes, or odor carried from the target site by air. Drift must be related to an application or mix/load activity.
Residue	:	The part of a pesticide that remains in the environment for a period of time following an application or drift. This includes odor after the completion of an application.
Other	:	Other route of exposure.
Unknown	:	Route of exposure is not known

7. **Hospitalization:**

Number of Cases	:	Number of people requiring hospitalization and those we are unsure of their hospitalization status following exposure to pesticides.
Days Known	:	Number of people hospitalized where the number of days in spent the hospital are known.
Indefinite	:	Number of people hospitalized where the extent of hospitalization is not known.
Unknown	:	Number of people for whom we are unable to determine if hospitalization occurred.
Total Days Reported	:	Number of full days (24-hour periods) an individual was hospitalized. The length of stay in the hospital includes time spent in the emergency room prior to hospital admission.

8. **Disability:** Time an individual missed work (or normal activity such as school) due to pesticide-related illness or injury.

Number of Cases	:	Number of people incurring lost work time and those we are unsure of their disability status following exposure to pesticides.
Days Known	:	Number of people incurring lost work time where the number of days off work is known.
Indefinite	:	Number of people with lost work time where the extent of the disability is not known.
Unknown	:	Number of people for whom we are unable to determine if lost work time occurred.
Total Days Reported	:	Number of full days an individual missed work (or normal activity such as school).

Whom to Contact:

California Department of Pesticide Regulation
Worker Health and Safety Branch
Phone: (916) 445-4222.
Physical address: 1001 I St., Sacramento CA 95814-2828.
Mailing address: P.O. Box 4015, Sacramento, CA 95812-4015
Fax: (916) 445-4280
www.cdpr.ca.gov

About the Pesticide Illness Survellience Program Data

Pesticide-related illnesses have been tracked within the state of California for nearly 50 years. The California Environmental Protection Agency, Department of Pesticide Regulation (DPR) maintains a surveillance program which records human health effects of pesticide exposure. The Pesticide Illness Surveillance Program (PISP) documents information on adverse effects from pesticide products, whether elicited by the active ingredients, inert ingredients, impurities, or breakdown products. This program maintains a database, which is utilized for evaluating the circumstances of pesticide exposures resulting in illness. This database is consulted regularly by staff who evaluate(s) the effectiveness of the DPR pesticide safety programs and recommend changes when appropriate.